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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,238	12/18/2001	Lance T. Ransom	GP-301069	3698
7590 12/28/2004 General Motors Corporation Legal Staff Mail Code 482-C23-B21 P.O. Box 300 Detroit, MI 48265-3000			EXAMINER KEENAN, JAMES W	
			ART UNIT 3652	PAPER NUMBER
DATE MAILED: 12/28/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/023,238	RANSOM, LANCE T.	
	Examiner	Art Unit	
	James Keenan	3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 21 October 2004.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-4 and 10-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-4 and 10-12 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/21/04 has been entered.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the disclosure as originally filed that the dunnage is "molded to the rack". Although the dunnage is disclosed as being molded, it is molded to a "supporting back 31", which in turn is attached to the side support 18 of the rack. The dunnage itself is not molded to the rack.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation that the dunnage is "molded to the rack" is not understood.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al (US 4,493,606, previously cited) in view of Hayashi et al (JP 8-96471, previously cited) and Cota (US 4,993,559).

Foulke et al show an apparatus for loading wafers (which are considered to be "panel assemblies", as broadly claimed) into a rack 14 (fig. 5) having side and bottom rails 128, 130, respectively, including slots 132 for receiving individual articles, a robot tool 42 mounted on arm 40 and adapted to load articles in the rack, the tool including sensor 400 (figs. 9-11) and compliant support 410-420 (fig. 16) which allows "soft placement" of the article into the rack.

Foulke et al do not show the rails to comprise "dunnage". Also, the sensor of Foulke et al senses the slots rather than a sensor hole adjacent the slots.

Cota shows a wafer carrier wherein side and bottom rails include "dunnage" 62, 68 (figs. 5, 6) which prevents damage to the wafers.

Hayashi et al show a wafer cassette with sensor holes adjacent slots thereof such that a sensor mounted on a robot arm determines the proper position in the rack from which to pick up an article.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Foulke et al by utilizing dunnage in the rails and sensing a hole adjacent each slot, as suggested by Cota and Hayashi et al, respectively, as this would simply be an art recognized means of preventing damage to wafers while being processed in the rack and an alternate equivalent means of sensing the proper position of wafers in a cassette, the utilization of which would require no undue experimentation and produce no unexpected results.

Re claim 3, although details of the slots are not shown, the examiner takes Official notice that the use of chamfered "lead-in angles" around the periphery of slots in a wafer cassette to guide wafers into position is a well known and obvious design expediency. Note also figs. 4 and 5 of Cota.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al in view of Hayashi et al and Cota, as applied to claim 1 above, and further in view of Hounsfield et al (US 4,702,667), of record.

The modified apparatus of Foulke et al does not include a lock for fixing the position of the compliant support.

Hounsfield et al show a robot having a compliant support between an arm and a gripper thereof, wherein a locking device is used to prevent displacement of the compliant support.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Foulke et al by adding a lock to the compliant support, as shown by Hounsfield et al, so as to provide selective compliance.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al in view of Hayashi et al and Cota, as applied to claim 1 above, and further in view of Becicka et al (US 5,098,254), of record.

The modified apparatus of Foulke et al does not show a second sensor on the tool for sensing an object in the rack and thus indicating a preload position.

Becicka et al show a robot having a tool with proximity sensors thereon which sense the position of articles previously loaded onto a pallet and thus indicate the proper position of the next article to be loaded. Although not explicitly stated, if no articles were previously loaded on the pallet, this obviously would be sensed as well and the robot would inherently be guided to a "preload" position.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Foulke et al with a second sensor for sensing the location of articles in the rack, including the absence of any articles, as shown by Becicka et al, so that the robot could load articles into the appropriate slot.

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10. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al in view of Cota and Hounsfield et al.

This rejection is substantially the same as that set forth above with respect to claim 2, except that since no sensor is claimed, the Hayashi et al reference is not used.

11. Claim 12, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al in view of Cota and Hounsfield et al, as applied to claims 10-11 above, and further in view of Kos (US 5,255,797).

The dunnage of Foulke et al as modified is not molded plastic.

Kos shows a wafer carrier wherein resilient cushions are used as dunnage in slots to protect the wafers from damage. Although not explicitly stated, the cushions are inherently considered "molded plastic", absent any further limitations.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Foulke et al by utilizing resilient or "molded plastic" dunnage, as shown by Kos, as this would provide improved damage protection during shipping of the cassette.

12. Applicant's arguments with respect to claims 1-4 and 10-12 have been considered but are moot in view of the new ground(s) of rejection.

Nevertheless, the following comments are deemed relevant.

Applicant argues that Foulke et al is non-analogous art, stating that its use for wafers in a diffusion furnace requires temperatures at which dunnage for auto parts

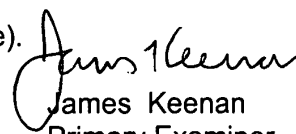
would not survive. However, the claims are not limited for use with any particular type of parts or in any environment. The parts themselves are not positively claimed, and even if they were, the broad recitation of "panel assemblies" in no way defines over wafers.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is 703-308-2559. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 703-308-3248. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


James Keenan
Primary Examiner
Art Unit 3652

Jwk
12/22/04